Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)

2. (currently amended) A transgenic plant comprising a recombinant nucleic acid molecule, wherein the nucleic acid molecule encodes a dermaseptin cationic peptide which confers microbial resistance to the plant.

3. (currently amended) ~~A~~ The transgenic plant ~~according to~~ of claim 2 wherein the dermaseptin peptide comprises an amino acid sequence shown in SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14.

4. (currently amended) ~~A~~ The transgenic plant ~~according to~~ of claim 3 wherein the peptide further comprises an N terminal peptide extension of between 2 and 25 amino acids in length.

5. (currently amended) ~~A~~ The transgenic plant ~~according to~~ of claim 4 wherein the N terminal peptide extension is selected from the group consisting of AMWK (SEQ ID: 39), ASRH (SEQ ID: 40), and ALWK (SEQ ID: 41).

6. (currently amended) A transgenic plant having microbial resistance, comprising a recombinant nucleic acid molecule, wherein the nucleic acid molecule encodes a fusion peptide having a formula P-D, wherein D is a dermaseptin peptide and P is an anionic pro-region peptide.

7. (currently amended) A transgenic plant having microbial resistance, comprising a recombinant nucleic acid molecule, wherein the nucleic acid molecule encodes a fusion peptide having a formula P-S-D, wherein D is a dermaseptin peptide, P is an anionic pro-region peptide and S is a spacer peptide.

8. (currently amended) A transgenic plant having microbial resistance, comprising a nucleic acid molecule encoding a peptide comprising an amino acid sequence selected from the group consisting of:

(a) SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14 ~~and fragments thereof~~;

(b) amino acid sequences that differ from an amino acid sequence specified in (a) by one or more conservative amino acid substitutions; and

(c) amino acid sequences that share at least ~~40%~~ 90% sequence identity with an amino acid sequence specified in (a),

wherein the peptide has dermaseptin biological activity.

9. (currently amended) ~~A~~ The transgenic plant ~~according to~~ of claim 8 wherein the peptide further comprises an anionic pro-region peptide operably linked to the N-terminus of the peptide.

10. (canceled)

11. (canceled)

12. (currently amended) A transgenic plant having microbial resistance, comprising a recombinant nucleic acid molecule encoding a peptide comprising SEQ ID NO: 28.

13.-15 (canceled)

16. (currently amended) The transgenic plant of claim 8, wherein the amino acid sequence shares at least 95% sequence identity to SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14.

17. (previously presented) The transgenic plant of claim 4, wherein the nucleic acid molecule comprises SEQ ID NO: 27.

18. (previously presented) The transgenic plant of claim 3, wherein the dermaseptin peptide comprises SEQ ID NO: 28.

19. (canceled)

20. (previously presented) The transgenic plant of claim 4 wherein the N terminal peptide extension comprises MAMWK (amino acids 1-5 of SEQ ID NO: 28) or MASRH (amino acids 1-5 of SEQ ID NO: 33).

21. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 3.

22. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 4.

23. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 5.

24. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 6.

25. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 7.

26. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 8.

27. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 9.

28. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 10.

29. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 11.

30. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 12.

31. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 13.

32. (new) The transgenic plant of claim 2, wherein the peptide comprises an amino acid sequence shown in SEQ ID NO: 14.

33. (new) The transgenic plant of claim 8, wherein the amino acid sequence comprises SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14 with one conservative amino acid substitution.

34. (new) The transgenic plant of claim 6, wherein the anionic pro-region peptide comprises SEQ ID NO: 16.

35. (new) The transgenic plant of claim 7, wherein the spacer peptide comprises between 2 and 25 amino acids.

36. (new) The transgenic plant of claim 7, wherein the spacer peptide comprises SEQ ID NO: 41.

37. (new) The transgenic plant of claim 6, wherein the dermaseptin peptide comprises SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14.

38. (new) The transgenic plant of claim 7, wherein the dermaseptin peptide comprises SEQ ID NO: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14.

39. (new) The transgenic plant of claim 2, wherein the plant is a tobacco plant or a potato plant.

40. (new) The transgenic plant of claim 2, wherein the plant is resistant to bacteria or fungi.

41. (new) The transgenic plant of claim 40, wherein the bacteria is *E. carotovora* or *E. coli.*

42. (new) The transgenic plant of claim 40, wherein the fungi is *Fusarium sp.* or Phytophthora *sp.*.